Modern C++ Library Workshop Solutions

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Iterators

- Given a vector int_vec containing odd and even ints, what would you expect the following code to do?

```
auto iter = int_vec.begin();
while (iter != int_vec.end()) {
   if (*iter % 2)
      iter = int_vec.insert(iter, 5);
   ++iter;
}
```

- Write a program to check whether you were right
- Fix the code to do what the programmer intended

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Iterators

- The programmer intended to insert the value 5 before every element with an odd value
- However, the code as shown causes an infinite loop when run
- This is because insert() adds an element just before its first argument and returns an iterator to the new element
  - When the iterator is incremented at the end of the loop, it gives the same element as on the previous iteration
  - It then inserts a new element just before the same element that it did last time
  - The loop will never progress past the first odd number

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Iterators

- The solution is to advance the iterator to point at the element the loop was processing
  - When the iterator is incremented at the end of the loop, it will then point to the next element in the sequence

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